Title (en)

Lateral junction field effect transistor device.

Title (de)

Lateraler Sperrschicht-Feldeffekttransistor.

Title (fr)

Transistor à effet de champ à jonction latérale.

Publication

EP 0083815 A2 19830720 (EN)

Application

EP 82201617 A 19821217

Priority

US 33499781 A 19811228

Abstract (en)

A lateral junction field effect transistor device comprises a substrate (11) of a first conductivity type and a semiconductor layer (12) of the second conductivity type. Furthermore the device includes both a surface semiconductor layer (16/20) of the first conductivity type located between the gate and drain contact regions (17/19, 15/21) of the device and a buried semiconductor layer (13) of the second conductivity type which extends beneath at least the drain contact region (15/21) and the surface semi-conductor layer (16/20) of the device. The buried layer (13) may be in the form of a continuous layer extending beneath the gate, source, and drain contact regions of the device as well as the surface semiconductor layer, or it may be provided in annular form with an aperture beneath the source and gate regions (18, 17/19). The annular central buried layer configuration (13A) may further include an additional buried layer portion (13B) extending beneath the source region (18) of the device. Devices having buried and surface layers in accordance with the invention feature improved high-voltage breakdown characteristics, enhanced conductivity in the "on" state, and the ability to operate in the source-follower mode.

IPC 1-7

H01L 29/80; H01L 29/06; H01L 21/74; H01L 29/10

IPC 8 full level

H01L 29/80 (2006.01); **H01L 21/337** (2006.01); **H01L 21/74** (2006.01); **H01L 29/06** (2006.01); **H01L 29/10** (2006.01); **H01L 29/808** (2006.01)

CPC (source: EP US)

H01L 21/74 (2013.01 - EP US); **H01L 29/0619** (2013.01 - EP US); **H01L 29/1029** (2013.01 - EP US); **H01L 29/808** (2013.01 - EP US)

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EP0167810A1; EP0155726A1; EP1779439A4; EP0167813A1; EP0167814A1; US4633281A; EP0167811A1; US4635084A; US4670764A

Designated contracting state (EPC)

DE FR GB NL

DOCDB simple family (publication)

EP 0083815 A2 19830720; **EP 0083815 A3 19850403**; **EP 0083815 B1 19870902**; CA 1193757 A 19850917; DE 3277159 D1 19871008; JP H0357614 B2 19910902; JP S58116776 A 19830712; US 4485392 A 19841127

DOCDB simple family (application)

EP 82201617 A 19821217; CA 418649 A 19821224; DE 3277159 T 19821217; JP 23507482 A 19821227; US 33499781 A 19811228